AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1-26 (canceled).

27 (previously presented). A communication apparatus selectively connectable to a central communication apparatus to perform a full duplex communication utilizing a Digital Subscriber Line (xDSL) modem, comprising:

a communicator that transmits a plurality of Capability List Request (CLR) signals to the central communication apparatus, said plurality of CLR signals including a capabilities list of the communication apparatus, said plurality of CLR signals further requesting that the central communication apparatus transmit a capabilities list of the central communication apparatus to the communication apparatus; and

said communicator transmitting acknowledge (ACK) signals when a plurality of Capability List (CL) signals, that include the capabilities list of the central communication apparatus, are received by the communication apparatus from the central communication apparatus, and thereafter transmitting to the central communication apparatus a plurality of Mode Select (MS) signals designating a particular communication mode, wherein first frequencies utilized by said plurality of CLR signals and said plurality of MS signals differ from second frequencies utilized

by said plurality of CL signals, said plurality of CLR signals carrying identical data with an identical timing but having different carrier frequencies, said plurality of MS signals carrying identical data with an identical timing but having different carrier frequencies.

28 (previously presented). The communication apparatus of claim 27, wherein said first frequencies are lower than said second frequencies.

29 (previously presented). The communication apparatus of claim 27, wherein said plurality of MS signals comprise three MS signals.

30 (previously presented). The communication apparatus of claim 29, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

31 (previously presented). The communication apparatus of claim 30, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

32 (previously presented). The communication apparatus of claim 27, wherein said plurality of CLR signals comprise three CLR signals.

33 (previously presented). The communication apparatus of claim 32, wherein frequencies utilized by said plurality of CLR signals comprise 9 times a base family

frequency, 17 times said base family frequency, and 25 times said base family frequency.

34 (previously presented). The communication apparatus of claim 33, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

35 (previously presented). The communication apparatus of claim 27, wherein said plurality of CL signals comprise three CL signals.

36 (previously presented). The communication apparatus of claim 35, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

37 (previously presented). The communication apparatus of claim 36, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

38 (previously presented). The communication apparatus of claim 27, wherein each MS signal includes an identification field that stores modulation independent information, and a standard information field that stores modulation dependent information, data in each field being hierarchically stored.

39 (previously presented). The communication apparatus of claim 38, wherein each MS signal has a plurality of octets, a highest bit of each of the plurality of octets delimiting data within the plurality of octets.

40 (previously presented). The communication apparatus of claim 38, wherein said identification field of each MS signal includes revision information.

41 (previously presented). The communication apparatus of claim 38, wherein said standard information field includes information designating ITU-T Recommendation G.992.1.

42 (previously presented). The communication apparatus of claim 38, wherein said standard information field includes information designating ITU-T Recommendation G.992.2.

43 (currently amended). A communication apparatus selectively connectable to a central communication apparatus to perform a full duplex communication utilizing a Digital Subscribe Line (xDSL) modem, comprising:

a communicator that transmits a plurality of Capability List Request (CLR) signals to the central communication apparatus, the CLR signals including a capabilities list of the communication apparatus, the CLR signals further requesting

that the central communication apparatus transmit a capabilities list of the central communication apparatus to the communication apparatus;

said communicator transmitting acknowledge (ACK) signals when a plurality of Capability List (CL) signals that include the capabilities list of the central communication apparatus are received by the communication apparatus, said communicator thereafter transmitting a plurality of Mode Request (MR) signals to the central communication apparatus, the plurality of MR signals requesting the central communication apparatus to transmit to the communication apparatus a plurality of Mode Select (MS) signals designating a particular communication mode; and

said communicator further transmitting one of [[an]] acknowledge (ACK) ~~signal~~ signals and [[a]] negative acknowledge (NAK) ~~signal~~ signals to the central communication apparatus when said plurality of MS signals are received by the communication apparatus, wherein first frequencies utilized by said plurality of CLR signals and said plurality of MR signals differ from second frequencies utilized by said plurality of CL signals and said plurality of MS signals, wherein said plurality of CLR signals carry identical data with an identical timing but using different carrier frequencies, said plurality of MR signals carrying identical data with an identical timing but using different carrier frequencies.

44 (previously presented). The communication apparatus of claim 43, wherein said first frequencies are lower than said second frequencies.

45 (previously presented). The communication apparatus of claim 43, wherein said plurality of MR signals comprise three MR signals.

46 (previously presented). The communication apparatus of claim 45, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

47 (previously presented). The communication apparatus of claim 46, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

48 (previously presented). The communication apparatus of claim 45, wherein the second frequencies comprise 40 times a base family frequency, 56 times said base family, and 64 times said base family frequency.

49 (previously presented). The communication apparatus of claim 48, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

50 (previously presented). The communication apparatus of claim 43, wherein said plurality of CLR signals comprise three CLR signals.

51 (previously presented). The communication apparatus of claim 50, wherein frequencies utilized by said CLR signals comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

52 (previously presented). The communication apparatus of claim 51, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

53 (previously presented). The communication apparatus of claim 43, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

54 (previously presented). The communication apparatus of claim 53, wherein said base family frequency comprises one of 4.3125 kHz or 4.000 kHz.

55 (previously presented). The communication apparatus of claim 43, wherein each MR signal starts and ends with an High level Data Link Control (HDLC) flag and includes at least an identification field and a frame check sequence field.

56 (previously presented). The communication apparatus of claim 55, wherein said identification field includes revision information.

57 (previously presented). The communication apparatus of claim 43, wherein said communicator transmits said NAK signal when said communicator receives said plurality of MS signals which require a non-executable mode.

58 (previously presented). The communication apparatus of claim 57, wherein said communicator returns the communication apparatus to an initialization state after said NAK signal is transmitted.

59 (currently amended). A central communication apparatus selectively connectable to a remote communication apparatus to perform a full duplex communication utilizing a Digital Subscriber Line (xDSL) modem, comprising:

a communicator that transmits a plurality of Capability List (CL) signals to the remote communication apparatus in response to a reception of a plurality of Capability List Request (CLR) signals from the remote communication apparatus, said plurality of CL signals including a capabilities list of the central communication apparatus, said plurality of CLR signals including a capabilities list of the remote communication apparatus, said CLR signals requesting that the central communication apparatus transmit a capabilities list of the central communication apparatus to the remote communication apparatus; and

said communicator transmitting one of [[an]] acknowledge (ACK) ~~signal~~ signals and [[a]] negative acknowledge (NAK) ~~signal~~ signals to the remote communication apparatus when a plurality of Mode Select (MS) signals that

designate a particular communication mode are received by the central communication apparatus, wherein first frequencies utilized by the plurality of CLR signals and said plurality of MS signals differ from second frequencies utilized by said plurality of CL signals, said CL signals carrying identical data with an identical timing, but using different carrier frequencies.

60 (previously presented). The central communication apparatus of claim 59, wherein said first frequencies are lower than said second frequencies.

61 (previously presented). The central communication apparatus of claim 59, wherein said plurality of CL signals comprise three CL signals.

62 (previously presented). The central communication apparatus of claim 61, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

63 (previously presented). The central communication apparatus of claim 62, wherein said base family frequency comprises one of 4.3125 kHz or 4.000 kHz.

64 (previously presented). The central communication apparatus of claim 61, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

65 (previously presented). The central communication apparatus of claim 64, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

66 (previously presented). A central communication apparatus selectively connectable to a remote central communication apparatus to perform a full duplex communication utilizing an xDSL modem, comprising:

a communicator that transmits to the remote communication apparatus a plurality of Capability List (CL) signals that include a capabilities list of the central communication apparatus when a plurality of Capability List Request (CLR) signals are received by the central communication apparatus from the remote communication apparatus, said CLR signals including a capabilities list of the remote communication apparatus, said CLR signals further requesting that the central communication apparatus transmit said capabilities list of the central communication apparatus to the remote communication apparatus; and

said communicator transmitting a plurality of Mode Select (MS) signals to the remote communication apparatus that designate a particular communication mode when a plurality of Mode Request (MR) signals are received by the central communication apparatus, said plurality of MR signals requesting that the central communication apparatus transmit said plurality of MS signals to the remote communication apparatus, wherein first frequencies utilized by said plurality of CLR signals and said plurality of MR signals differ from second frequencies utilized by said plurality of CL signals and said plurality of MS signals, said plurality of CL

signals carrying identical data with an identical timing but using different carrier frequencies, said plurality of MS signals carrying identical data with an identical timing but using different carrier frequencies.

67 (previously presented). The central communication apparatus of claim 66, wherein said first frequencies are lower than said second frequencies.

68 (previously presented). The central communication apparatus of claim 66, wherein said plurality of MS signals comprise three MS signals.

69 (previously presented). The central communication apparatus of claim 68, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

70 (previously presented). The central communication apparatus of claim 69, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

71 (previously presented). The central communication apparatus of claim 68, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

72 (previously presented). The central communication apparatus of claim 71, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

73 (previously presented). The central communication apparatus of claim 66, wherein said plurality of CL signals comprise three CL signals.

74 (previously presented). The communication apparatus of claim 66, wherein each MS signal of said plurality of MS signals includes an identification field that stores modulation independent information, and a standard information field that stores modulation dependent information, data in said identification field and in said standard information field being hierarchically stored.

75 (previously presented). The communication apparatus of claim 74, wherein each MS signal has a plurality of octets, a highest bit of each of said plurality of octets delimiting data within said plurality of octets.

76 (previously presented). The communication apparatus of claim 74, wherein said identification field includes revision information.

77 (previously presented). The communication apparatus of claim 74, wherein said standard information field includes information designating ITU-T Recommendation G.992.1.

78 (previously presented). The communication apparatus of claim 74, wherein said standard information field includes information designating ITU-T Recommendation G.992.2.

79 (currently amended). A method for performing a full duplex communication from a remote communication apparatus to a central communication apparatus utilizing a Digital Subscriber Line (xDSL) modem, comprising:

transmitting to the central communication apparatus a plurality of Capability List Request (CLR) signals that include a capabilities list of the remote communication apparatus, the CLR signals further requesting that the central communication apparatus transmit a capabilities list of the central communication apparatus to the remote communication apparatus; and

transmitting [[an]] acknowledge (ACK) ~~signal~~ signals when a plurality of Capability List (CL) signals that include the capabilities list of the central communication apparatus are received by the remote communication apparatus, a plurality of Mode Select (MS) signals thereafter being transmitted to the central communication apparatus that designate a particular communication mode, wherein first frequencies utilized by the plurality of CLR signals and the plurality of MS signals differ from second frequencies utilized by the CL signals, the plurality of CLR signals carrying identical data with an identical timing but using different carrier frequencies, the plurality of MS signals carrying identical data with an identical timing but different carrier frequencies.

80 (previously presented). The communication apparatus of claim 79, wherein said first frequencies are lower than said second frequencies.

81 (previously presented). The communication apparatus of claim 79, wherein said plurality of MS signals comprise three MS signals.

82 (previously presented). The communication apparatus of claim 81, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

83 (previously presented). The communication apparatus of claim 82, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

84 (previously presented). The communication apparatus of claim 79, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

85 (previously presented). The communication apparatus of claim 84, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

86 (previously presented). The communication apparatus of claim 79, wherein each MS signal includes an identification field that stores modulation independent

information, and a standard information field that stores modulation dependent information, data in each field being hierarchically stored.

87 (previously presented). The communication apparatus of claim 86, wherein each MS signal has a plurality of octets, a highest bit of each of the plurality of octets delimiting data within the plurality of octets.

88 (previously presented). The communication apparatus of claim 86, wherein said identification field of each MS signal includes revision information.

89 (previously presented). The communication apparatus of claim 86, wherein said standard information field includes information designating ITU-T Recommendation G.992.1.

90 (previously presented). The communication apparatus of claim 86, wherein said standard information field includes information designating ITU-T Recommendation G.992.2.

91 (currently amended). A method for performing a full duplex communication from a remote communication apparatus to a central communication apparatus utilizing a Digital Subscriber Line (xDSL) modem, comprising:

transmitting to the central communication apparatus a plurality of Capability List Request (CLR) signals that include a capabilities list of the remote communication apparatus, the plurality of CLR signals further requesting that the central communication apparatus transmit to the remote communication apparatus a capabilities list of the central communication apparatus;

transmitting [[an]] acknowledge (ACK) ~~signal~~ signals in response to a plurality of Capability List (CL) signals issued by the central communication apparatus, the plurality of CL signals including a capabilities list of the central communication apparatus, are received by the communication apparatus from the central communication apparatus, a plurality of Mode Request (MR) signals thereafter being issued to the central communication apparatus that requests that the central communication apparatus transmit a plurality of Mode Select (MS) signals to the remote communication apparatus that designate a particular communication mode; and

further transmitting one of said ACK ~~signal~~ signals and [[a]] negative acknowledge (NAK) ~~signal~~ signals to the central communication apparatus when said plurality of MS signals are received by the communication apparatus, first frequencies utilized by the plurality of CLR signals and the plurality of MR signals and second frequencies utilized by the plurality of CL signals and the plurality of MS signals belonging to a mutually different band, the CLR signals carrying identical data with an identical timing but using different carrier frequencies, the plurality of

MR signals carrying identical data with an identical timing but using different carrier frequencies.

92 (previously presented). The communication apparatus of claim 91, wherein said first frequencies are lower than said second frequencies.

93 (previously presented). The communication apparatus of claim 91, wherein said plurality of MR signals comprise three MR signals.

94 (previously presented). The communication apparatus of claim 93, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

95 (previously presented). The communication apparatus of claim 94, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

96 (previously presented). The communication apparatus of claim 91, wherein the second frequencies comprise 40 times a base family frequency, 56 times said base family, and 64 times said base family frequency.

97 (previously presented). The communication apparatus of claim 96, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

98 (previously presented). The communication apparatus of claim 91, wherein each MR signal starts and ends with an High level Data Link Control (HDLC) flag and includes at least an identification field and a frame check sequence field.

99 (previously presented). The communication apparatus of claim 98, wherein said identification field includes revision information.

100 (currently amended). A method for performing a full duplex communication from a central communication apparatus to a remote communication apparatus utilizing a Digital Subscriber Line (xDSL) modem, comprising:

transmitting to the remote communication apparatus a plurality of Capability List (CL) signals that include a capabilities list of the central communication apparatus when a plurality of Capability List Request (CLR) signals that include a capabilities list of the remote communication apparatus is received by the central communication apparatus, said plurality of CLR signals requesting that said central communication apparatus transmit said capabilities list of the central communication apparatus to the remote communication apparatus; and

transmitting one of [[an]] acknowledge (ACK) ~~signal~~ signals and [[a]] negative acknowledge (NAK) ~~signal~~ signals to the remote communication apparatus when a plurality of Mode Select (MS) signals that designate a particular communication mode are received by the central communication apparatus, wherein first frequencies utilized by said plurality of CLR signals and said plurality of MS signals

and second frequencies utilized by said plurality of CL signals belong to a mutually different band, said plurality of CL signals carrying identical data with an identical timing but using different carrier frequencies.

101 (previously presented). The central communication apparatus of claim 100, wherein said first frequencies are lower than said second frequencies.

102 (previously presented). The central communication apparatus of claim 100, wherein said plurality of CL signals comprise three CL signals.

103 (previously presented). The central communication apparatus of claim 102, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

104 (previously presented). The central communication apparatus of claim 103, wherein said base family frequency comprises one of 4.3125 kHz or 4.000 kHz.

105 (previously presented). The central communication apparatus of claim 100, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

106 (previously presented). The central communication apparatus of claim 105, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

107 (currently amended). A method for performing a full duplex communication from a central communication apparatus to a remote communication apparatus utilizing a Digital Subscriber Line (xDSL) modem, comprising:

transmitting to the remote communication apparatus a plurality of Capability List (CL) signals that include a capabilities list of the central communication apparatus when a plurality of Capability List Request (CLR) signals that include a capabilities list of the remote communication apparatus are received by the central communication apparatus, the plurality of CLR signals requesting that the central communication apparatus transmit said capabilities list of the central communication apparatus to the remote communication apparatus; and

transmitting one of [[an]] acknowledge (ACK) ~~signal~~ signals and [[a]] negative acknowledge (NAK) ~~signal~~ signals to the remote communication apparatus when a plurality of Mode Select (MS) signals that designate a particular communication mode are received by the central communication apparatus in response to a plurality of Mode Request (MR) signals issued by the remote communication apparatus, wherein first frequencies utilized by said plurality of CLR signals and said plurality of MR signals and second frequencies utilized by said plurality of CL signals and said plurality of MS signals belong to a mutually different band, said plurality of CL

signals carrying identical data with an identical timing but different carrier frequencies, said plurality of MS signals carrying identical data with an identical timing but using different carrier frequencies.

108 (previously presented). The central communication apparatus of claim 107, wherein said first frequencies are lower than said second frequencies.

109 (previously presented). The central communication apparatus of claim 107, wherein said plurality of MS signals comprise three MS signals.

110 (previously presented). The central communication apparatus of claim 107, wherein said first frequencies comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

111 (previously presented). The central communication apparatus of claim 110, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

112 (previously presented). The central communication apparatus of claim 107, wherein said second frequencies comprise 40 times a base family frequency, 56 times said base family frequency, and 64 times said base family frequency.

113 (previously presented). The central communication apparatus of claim 112, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

114 (previously presented). The communication apparatus of claim 107, wherein each MS signal of said plurality of MS signals includes an identification field that stores modulation independent information, and a standard information field that stores modulation dependent information, data in said identification field and in said standard information field being hierarchically stored.

115 (previously presented). The communication apparatus of claim 114, wherein each MS signal has a plurality of octets, a highest bit of each of said plurality of octets delimiting data within said plurality of octets.

116 (previously presented). The communication apparatus of claim 114, wherein said identification field includes revision information.

117 (previously presented). The communication apparatus of claim 114, wherein said standard information field includes information designating ITU-T Recommendation G.992.1.

118 (previously presented). The communication apparatus of claim 114, wherein said standard information field includes information designating ITU-T Recommendation G.992.2.